DATE FILED: May 4, 2015
CASE NUMBER: 2014SC224

SUPREME COURT, STATE OF COLORADO 2 East 14th Avenue Denver, Colorado 80203	FILED IN THE SUPREME COURT MAY 04 2015 OF THE STATE OF COLORADO Christopher T. Ryan, Clerk
Court of Appeals No. 13CA517 Judges Fox, Navarro, and Jones	
Petitioner(s): Salynda E. Fleury, individually, on behalf of Indyka Norris and Sage Norris, and as surviving spouse of Christopher H. Norris **Respondent(s):** IntraWest Winter Park Operations Corporation	▲ COURT USE ONLY ▲
Attorney for Amicus Curiae: Association of Professional Patrollers and Fédération Internationale des Patrouilles de Ski Edward C. Gassman GASSMAN LAW FIRM LLC AND COMMUNITY LEGAL CENTER Post Office Box 2631 Loveland, CO 80539 Tel: (970) 227-5451 Fax: (970) 203-1659 lawfirm@gassman.us Atty. Reg. #: 22533	Case Number: 14SC224

BRIEF OF AMICUS CURIAE ASSOCIATION OF PROFESSIONAL PATROLLERS AND FÉDÉRATION INTERNATIONALE DES PATROUILLES DE SKI IN SUPPORT OF RESPONDENT

CERTIFICATE OF COMPLIANCE

I hereby certify that this amicus brief complies with all requirements of C.A.R. 28 and C.A.R. 32, including all formatting requirements set forth in these rules. Specifically, the undersigned certifies that:

1. The brief complies with C.A.R. 28(g).

   Choose one:

   ___ It contains ___ words.

   _X_ It does not exceed 30 pages.

2. The brief complies with C.A.R. 28(k).

   ___ For the party raising the issue:

   It contains under a separate heading (1) a concise statement of the applicable standard of review with citation to authority; and (2) a citation to the precise location in the record, not to an entire document, where the issue was raised and ruled on.

   _X_ For the party responding to the issue:

   It contains, under a separate heading, a statement of whether such party agrees with the opponent's statements concerning the standard of review and preservation for appeal, and if not, why not.

Edward C. Gassman

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TABLE OF AUTHORITIES

Statutes:

Cases:

Other Authorities:

The references included below expand on the detailed scientific understanding professionals in avalanche mitigation currently hold. They are provided to give a more robust set of studies and wider coverage of issues if so desired. However, the basic concepts and information herein are an accurate and concise representation of the more comprehensive data referenced.

INTRODUCTION

Comes now the Association of Professional Patrollers (APP) and Fédération Internationale des Patrouilles de Ski (FIPS) by undersigned counsel and pursuant to C.A.R. 29 presents this *amicus curiae* in support of Respondent. The APP and FIPS submits this brief not as industry entities protecting any financial interest, but as non-profit professional educational organizations interested in the safety of its membership and the skiers they serve. Avalanche mitigation is a primary role of professional ski patrol members at ski areas and their work is vital to the safety of Colorado's skiers, as well as skiers around the world.

FIPS and APP are concerned because of Colorado's pre-eminence in the ski industry. Any legal decision will have implications throughout the world as to how ski patrollers are used by area management. This *Amicus* brief has two purposes: (1) educate the Court on the science of avalanches and the intrinsic rules of Nature they follow, and (2) urge the Court to interpret that the legislature's intent in the law, §33-44-101 to -114, C.R.S. (2014), was to be consistent with the rules of nature.

Avalanches are an inherent natural phenomenon. If there are mountains, gravity, changing weather conditions, and existing or changing snow conditions as defined in the statute (id) there is the inherent risk of avalanches. Just as man

cannot control nature, no person or method has the ability to guarantee prevention or consistently predict avalanches. Due to this unpredictability, trained professional ski patrollers are killed and/or seriously injured every year trying to minimize avalanche danger and make the slopes safer for the public. Avalanches whether inbounds on a run open to skiers or out-of-bounds on an area closed to skiers follow the same intrinsic rules of nature. A law inconsistent with the laws of nature will decrease both the public and ski patrol safety. No increased measure of effort or signage can remove the danger. Declaring in-bound avalanches on slopes open to skiers not an inherent risk would give skiers either a false sense of security on open ski runs or driving more skiers out-of-bounds to less safe runs as inbounds slopes are closed because of avalanche liability concerns. The practical result of a law eliminating the inherent dangers of avalanches on some slopes is inconsistent with Nature's rules and also decreases the safety of professional ski patrollers as they would inevitably take further risks to try to ensure an avalanche free environment that is impossible to achieve.

STATEMENT OF ISSUE PRESENTED

Whether "inherent dangers and risks of skiing," as defined in section 33-44-103(3.5), C.R.S. (2014), encompasses avalanches that occur within the bounds of a ski resort, in areas open to skiers at the time in question.

INTEREST OF AMICUS PARTIES

Association of Professional Patrollers (APP) was formed in 1969 and is a California non-profit corporation. As ski areas became larger, just having volunteers on the weekend was not enough. During the 1950's and 1960's ski areas started hiring full time paid patrollers. The need arose to provide standardized training for these professionals. A curriculum was developed to train and certify patrollers in nine areas. They are: Skiing, Toboggan Handling, Rope Rescue/Lift Evacuation, Medical, Hill and Lift Operation, Risk Management, Avalanche Snow Science, Avalanche Rescue, Avalanche Mitigation and Use of Explosives. The three avalanche modules were the most important and driving factor due to the fact patrollers were being killed trying to protect the public from avalanches. https://app.wildapricot.org/history-by-laws.

Fédération Internationale des Patrouilles de Ski (FIPS) was formed in 1979 and is a Canadian non-profit. As with APP, because patrollers were getting killed there was increased management and legal pressure on ski patrollers to "ensure" safe skiing conditions. There arose a need to share best practices. FIPS holds a Congress every two years attended by leaders of ski patrols from around the world. There are three standing committees—Avalanche, Risk Management, and Medical. These allow experts in these areas to communicate on a regular basis. This

provides for rapid communication of both potential problems as well as solutions. http://www.fips-skipatrol.org.

The authorities cited and expertise within this brief are based on the knowledge and experience of actual patrollers that risk their lives every day to make skiing safer for the public all over the world. Board members of APP and FIPS average over 30 years patrol experience, totaling over 670 years of first hand avalanche experience. In addition to input from the above Board members, input was also provided by Ed Carlson, former Forest Service Supervisor and current FIPS Avalanche Committee Chairman; the staff of Community Legal Center, a Colorado non-profit dedicated to helping veterans and modest means citizens—especially law student extern and veteran Michael Shay. Many patrollers are veterans and especially those working with explosives doing avalanche mitigation work. Ski Patrollers started the 10th Mountain Division here in Colorado and that tradition continues. For example undersigned counsel, retired military and longtime patroller, currently heads high altitude training for elite Special Forces and was almost killed doing avalanche mitigation.

STANDARD OF REVIEW

The appeal presents a pure question of law, which was preserved below and which this Court reviews *de novo*. *See Specialty Restaurants Corp. v. Nelson*, 231 P.3d 393, 397 (Colo. 2010).

ARGUMENT

I. *Introduction*

In simple non-scientific terms, avalanches occur when the weight of the snow combined with the force of gravity exceed the cohesion between different layers in the snow or between the snow and the ground. The same forces apply whether inbounds at a ski area or out-of-bounds. Nature does not care whether a human has placed an open or closed sign on the run. Being struck by lightning is less of an inherent danger than an avalanche. You can see the storm clouds; you can see lightning off in the distance, etc. You can not see the weak layers in the snow. As new snow falls or the temperatures or wind changes you can not see the changes taking place in the snow that was safe at 10 AM but is no longer safe at 10:30 AM. A 1° change in temperature can result in an avalanche. http://arc.lib.montana.edu/snow-science/objects/ISSW14_paper_O4.04.pdf.

Professional ski patrollers use either explosives or actual skiing on a slope to try and get it to avalanche. They dig pits and do various tests to look for weaknesses in the snow. While training and experience have allowed better

prediction of whether a slope is safe, they cannot test every inch of a slope or see the full range of possible causes. Additionally, new snow, wet snow and water infiltration, wind, or temperature changes can make a slope unsafe shortly after it was tested and found unlikely to avalanche. http://arc.lib.montana.edu/snow-science/workshops.php.

As an actual example, at Crystal Mountain in 1980 an experienced patroller did test pits on a slope with no indication of weakness in the snow; then explosives were used with no indication of weakness; then the slope was ski cut in a zig zag pattern trying to get the slope below to avalanche. At the bottom it was deemed safe and the other patrollers waiting at the top were called down. They triggered an avalanche and the first patroller who was at the bottom (undersigned Counsel) was buried and then fortunately rescued by those above him.

Skiers can be killed on runs with a low chance of avalanche for example by an avalanche 1.5 miles away that brings trees, rocks and snow onto the low risk slope. Many avalanches are small ones within the trees, some being fatal. For example skiers have been killed when a very small section of snow gave way (a micro avalanche) next to a tree causing them to fall head first into the tree well and suffocate. Even if the ski patrol were successful in stabilizing a main run, it is never possible to stabilize the snow around every tree on either side of the run. In

fact, the very act of mitigation activities on open slopes (explosives, ski cutting, grooming) making the slopes safer for some skiers causes other skiers to seek out untracked powder in the trees.

Patrollers can move or mark rocks; they can pad or mark lift towers—both recognized inherent dangers on open in-bound slopes. But they cannot see, move, mark or pad an avalanche danger. Saying avalanches on certain slopes are not an inherent danger and risk would be inconsistent with nature and presumes the existence of technical abilities that do not exist.

There are no certain practices or scientific data that can ever ensure that any given slope will not avalanche. Reversal in the present case would deny that truth and likely encourage ever increasing and dangerous protocols in the hopes of accomplishing a guaranteed avalanche safe state that is impossible to achieve. Additionally, the need to close ski runs due to unsure avalanche danger may create a situation that drives skiers to less safe out-of-bounds areas. This type of unsafe out-of-bounds skiing puts both skiers and patrol members trying to protect or rescue them in greater danger.

For these reasons both best practices and law need to consistently reflect the inherent nature of the danger. To do otherwise exposes skiers and ski patrol alike to unnecessary risk. The District Court granted a judgment on the pleadings

in favor of Respondent and the Court of Appeals affirmed. This Court should likewise interpret the legislature's intent was to include avalanches as one of the natural inherent dangers and risks of skiing. By definition avalanches are caused by changes in weather and existing and changing snow conditions—both explicit inherent risks. *Ski Safety Act of 1979,* C.R.S. 33-44-101 to -114 (2014).

II. *Avalanche Science*

Avalanches are complex natural phenomena and as such have innumerable factors that contribute to their occurrence. Because there are so many factors involved, accurate forecasting of where and when avalanches will occur is difficult. Avalanche professionals know certain combinations of factors contribute to more unstable snow conditions and under such conditions there is a higher potential for avalanche occurrence. However, like most natural phenomena (earthquakes, tornados, etc.) avalanches are impossible to predict with 100% accuracy. Fredston and Fesler, *Snow Sense: A Guide To Evaluating Snow Avalanche Hazard*, 5th Ed. pg. 16 (2011)

There are countless factors that interact with each other to create avalanche potential. Of these, weather, topography and snow conditions are the three major factors.

Weather is known as the architect of the snowpack. Through precipitation, wind, and temperature weather drives the development of and changes within the snowpack. It also can greatly increase stresses applied to existing layers within the snowpack. Many avalanche cycles result from rapid weight loading on the snowpack due to windblown snow and precipitation. Rapid weight loading can cause weak layers within the snowpack to collapse. If this collapse occurs on a steep enough slope the layers above the collapsing layer will slide. The effects of temperature on the snowpack can be very complicated but in simple terms it can alter the strength of the snowpack and profoundly change the potential for avalanches. Weather can cause very rapid changes in avalanche potential.

Topography factors such as steepness, shape, elevation, and aspect contribute to stresses on and within the snowpack. With societal changes we are seeing more and more recreationists and professional sports figures seeking the thrill of big risk. This means skiers are seeking more extreme terrain. Some terrain that is skied on a regular basis today saw little or no traffic 15 to 20 years ago. With this thrill seeking mentality comes a higher risk of injury or death due to avalanches.

Although avalanche professionals cannot change topography, within ski resort boundaries they can control access to hazardous terrain through closures.

Through research and historical data avalanche professionals have been able to identify terrain features that tend to increase avalanche potential. However, determining which terrain will be hazardous at any given time can be difficult. Many times very subtle changes in terrain can produce conditions that are conducive to avalanches. Every year avalanches occur on slopes that have historically never been prone to avalanching and on which no one would have predicted a slide. http://avalanche.state.co.us/forecasts/help/avalanche-problems.

The third major factor affecting avalanche potential is snow conditions. The snowpack is in a constant state of change that the avalanche world calls metamorphism. As the snowpack goes through the process of metamorphism certain changes within the snowpack contribute to higher avalanche potential while other changes contribute to lower avalanche potential. Under certain conditions these changes occur rapidly and under other conditions changes occur very slowly. Generally, *changes that contribute to a higher avalanche potential occur rapidly* (emphasis added) and changes that contribute to lower avalanche potential occur relatively slowly.

The snowpack is one contributing factor that avalanche professionals can alter through various techniques in an attempt to decrease the potential for avalanche occurrence. One of the most widely used avalanche control techniques

is compaction. By maintaining traffic on a given slope the snowpack stays in a constant state of compaction and is therefore much less likely to avalanche. However, the unforeseeable does happen. In May 2005 a skier at Arapahoe Basin was killed in an avalanche on a heavily moguled and compacted run from the use of thousands of skiers throughout the season. This came as a great surprise to the entire avalanche community.

Other avalanche control techniques focus on causing avalanches to occur through artificially triggering them. Many believe that once the slope has avalanched the hazard has been eliminated. However, due to unknown factors and ever-changing conditions the hazard can be reduced but cannot be completely eliminated. Most avalanche professionals have witnessed avalanches occurring after these techniques have been used. In May 2005 a skier was killed at The Canyons Resort in Utah after avalanche control measures had been conducted on the slope he was skiing and in December 2008 a skier at Snowbird, UT was killed after avalanche control work. In the Snowbird avalanche more than 300 skiers had crossed the slope after avalanche control work was completed and prior to the accident occurring. http://www.skinet.com/ski/mountain-life/news/2010/01/what-now-inbounds-avalanches.

Most avalanche professionals working to mitigate avalanche hazards have witnessed avalanches occurring when all of their predictions indicated the conditions were safe and they also have witnessed times when their predictions indicate the hazard is high but when they attempt to artificially initiate slides they get no results. Science and history have taught avalanche professionals many lessons about predicting when and where avalanches may occur. However, the most important lesson is that despite our best efforts anomalies occur. Mother Nature, although not hostile, is unforgiving and constantly confronts us with many natural hazards. Even though professionals spend lifetimes studying how to predict and mitigate these hazards, they still exist and cannot be completely eliminated.

As a comparison with other naturally occurring events avalanches are best compared to rock and earth slides. In Glenwood Canyon, CO the Colorado Department of Transportation (CDOT) and Federal Highway Administration have done a significant amount of rock stabilization work and installation of many rock slide barriers to protect Interstate 70. In addition to this they regularly perform rock scaling which manually releases loose rock under controlled conditions. Yet, despite their best efforts rock slides still occur that damage the highway and occasionally cause injury or death to highway users.

As human beings, we desperately want to hold onto the notion that if we know a certain phenomenon exists we can manage and control it. However, Mother Nature proves to us every day that there are many things in life we cannot fully control. Snow is a product of nature and as such is a very complex material. Scientists and professional practitioners have dedicated years of research to finding better ways to mitigate the risks of living, working and recreating in avalanche terrain. *"Canadian Conference"*, by Ed Carlson, Contributor, Ski Patrol Magazine, Volume 32, pg. 60. Every year this research gives avalanche professionals better insight into avalanches and possible solutions to the problems they cause. However, one fact that is certain when it comes to avalanches, despite the best efforts of avalanche professionals, if we enter terrain where a snowpack exists there is always a chance of an avalanche occurring.

III. *Avalanche Mitigation*

Man's desire to "control" avalanches dates back to 3,000 BC when the first skis were used. Whole villages were destroyed when the mountain above the village avalanched. The concept developed to periodically intentionally create avalanches to prevent huge destructive avalanches from having a chance to develop. As railways and then roads spread across the world, this became more important. It was found the use of explosives was sometimes effective in creating

avalanches. This concept was used both defensively and offensively in World Wars I and II. During and after that period, military artillery was used to protect roads and structures by creating avalanches, as controlled burns in forests are used.

What became apparent as Avalanche Science developed was the more that was learned the more obvious it was that the many variables acting invisibly in the snowpack make avalanches a true inherent danger that could not be prevented or accurately predicted.

As ski areas developed, use of military artillery was used where practical. However it became apparent the only way to maximize safety and minimize risk for the public was to put patrollers at risk by having them hike to potential slide areas and throw or place bombs on the snow.

At high altitude and cold temperatures especially in a snow environment there is high static electricity content so remote electric detonators are not safe. This requires a patroller to light an old fashioned fuse, ensure it is lit, toss it onto the desired location and then quickly retreat to a safe location above and behind the potential avalanche area. If everything goes well a patroller has about 90 seconds to get to a safe location.

It was found in some instances these hand charges work better than artillery which penetrates the snow and allows the snow to absorb the shock wave. More

recently it has been learned that an air blast above the snow surface can be the most effective in some snow conditions.

Picture it being 20 degrees below zero with high winds and blowing snow on a ridge above 10,000 feet. You have thrown several bombs but no avalanche. As a patroller you believe there is a significant avalanche risk. To make the slope safer for the public you ski out onto the slope to what is the highest avalanche potential location. You tie a bomb to the top of a bamboo stake, stick it into the snow and light the fuse. You must wait to make sure it is lit and then ski safely to a potential safe zone. If that slope is deemed safe, the patrol then ski cuts it in a zig zag pattern feeling for weak spots. All the while at least one patroller waits safely at the top in case the first patroller is trapped in an avalanche. If all patrollers make it down safely; the slope is deemed safe and opened. An hour later after 50 skiers ski the slope it has fundamentally changed and may avalanche. This is the life of a professional patroller.

IV. *Inherent Danger Examples*

In January 2006 at Steamboat, a snowboarder triggered an avalanche to skier's left of Chute 3, on Mount Werner. Then, on the night of January 15, 2006,

a slab with a five to seven foot crown broke loose under Snowbird's GAD 2 lift—despite having been blasted and skied on that day.

On April 17, 2006 about 2PM Mammoth Ski Area in California had a major inbound avalanche on an open slope after explosives and ski mitigation. Many members of the public had skied the slope safely prior to the avalanche. The avalanche was so large approximately 450 people participated in search and rescue operations anticipating many people were buried. Miraculously only one person was buried and she lived. In average years Mammoth patrollers use 1,000 explosives shot from their two military 105 MM Howitzers and 5,000 hand thrown bombs as well as ski testing by patrollers to mitigate the risk. This event demonstrates regardless of professional effort patrollers can not prevent or protect against avalanches even an occasional major avalanche.

In 2013 an in-bound avalanche at Arapahoe Basin struck a group of 15 skiers. This avalanche is significant for both the parties and circumstances. The area had received extensive avalanche mitigation work including explosives that day, the day before and several days prior. The area manager and ski patrol had just skied it to determine its safety and the party struck by the avalanche was led by one of the most experienced ski patrollers on the mountain.

Unusual? Yes. But not as shocking as the in-bound 1,000-foot-long, 350-foot-wide wet slide that broke loose on May 20, 2005 on Arapahoe Basin's bumped-out (moguled) 1st Alley run, off the Pallavicini lift—which had been heavily skier compacted for five months—and killed a 53-year-old skier named David Conway. Arapahoe Basin is one of the oldest ski areas in the country with 70 years of avalanche mitigation experience, and some of the most experienced patrollers. Statistics show that inbounds avalanches are very rare—but can happen anywhere at any time.

Many deaths involving avalanches are traumatic injuries from hitting trees or rocks, which are, identified inherent dangers. *Ski Safety Act of 1979,* C.R.S. 33-44-101 to -114 (2014). In some avalanche deaths the victim had warnings of high risk while in other deaths there was no warning. In many avalanches there are several skiers involved but only one is killed. Who actually initiated the avalanche may not be the one who was killed. These actual situations would raise a series of difficult and complex questions creating significant operational issues for ski patrollers if some avalanches are NOT an inherent danger.

CONCLUSION

Avalanche danger is not inherent because the law states it so. Avalanches are an inherent danger and risk of the sport of skiing because they are

fundamentally inseparable from the sport of skiing and all winter alpine activities. Any ruling otherwise will put the law, its intent, and future litigation at odds with the realities of the facts and issues before them. The Colorado Avalanche Information Center does an excellent job of letting the public know the various levels of avalanche risk from high to low. It is important to note they do NOT have a "No Risk" category.

Patrollers responsible for avalanche mitigation and the public's safety would be in an untenable position if avalanches on some slopes were legally declared not an inherent danger. This would place both their jobs and/or lives in increased jeopardy if they refused to agree to open slopes or by doing unsafe mitigation trying to guarantee safety when that is not possible. It will also decrease public safety by creating a false sense of security on opened runs.

At the last FIPS Congress in April 2014 because of the unpredictability of avalanches it was agreed to recommend changing common signage to better advise the public. Most current signage says "Avalanche Danger Closed" or simply "Open". The recommendation was that the signage read "Avalanche Danger Closed" or "Avalanche Danger Open." This would hopefully improve the awareness of skiers of the always present inherent dangers and risks of avalanches. With improved equipment and technology skiers are already taking increasing

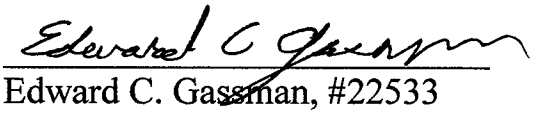
risks with a false sense of security. Therefore it is more critical than ever the law continue to reflect its support of the inherent nature of the danger and risk of avalanches.

It is the hope of APP and FIPS that the above information from the professionals who have a compelling interest in the publics and their own safety will be helpful to the Court in making an informed decision.

For the foregoing reasons, and those argued by the Respondents, APP and FIPS respectfully requests that this Court affirm the judgment of the Court of Appeals.

Dated: May 4, 2015

GASSMAN LAW FIRM LLC AND
COMMUNITY LEGAL CENTER



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CERTIFICATE OF SERVICE

I hereby certify that on this 4th day of May 2015, a true and correct copy of the foregoing was filed with the Court and served via U.S. mail on the following:

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